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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
193048 MLRS, MISSILE NUMBER V-38-001, ROUND NUMBER V-182/1W-1, --ETC(U)
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METEOROLOGICAL DATA REPORT,

6

19304B MLRS,

Missile Number V-38-001,

Round Number V-182/IW-1,

10 Aug 1981,

10 August 1981.

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by

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DONALD C. KELLER

Program Support Coordinator

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304B MLRS, Missile No. V-38-001, Round No. V-182/IW-1 presented in tabular form.		

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INTRODUCTION

19304B MLRS, Missile Number V-38-001, Round Number V-182/IW-1, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1508:56 MDT, 10 Aug 81. The scheduled launch time was 1400 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations.

a. Surface:

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind speed and direction, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air:

(1) Low level wind data were obtained from Pilot-Balloon observations at:

SITE AND ALTITUDE

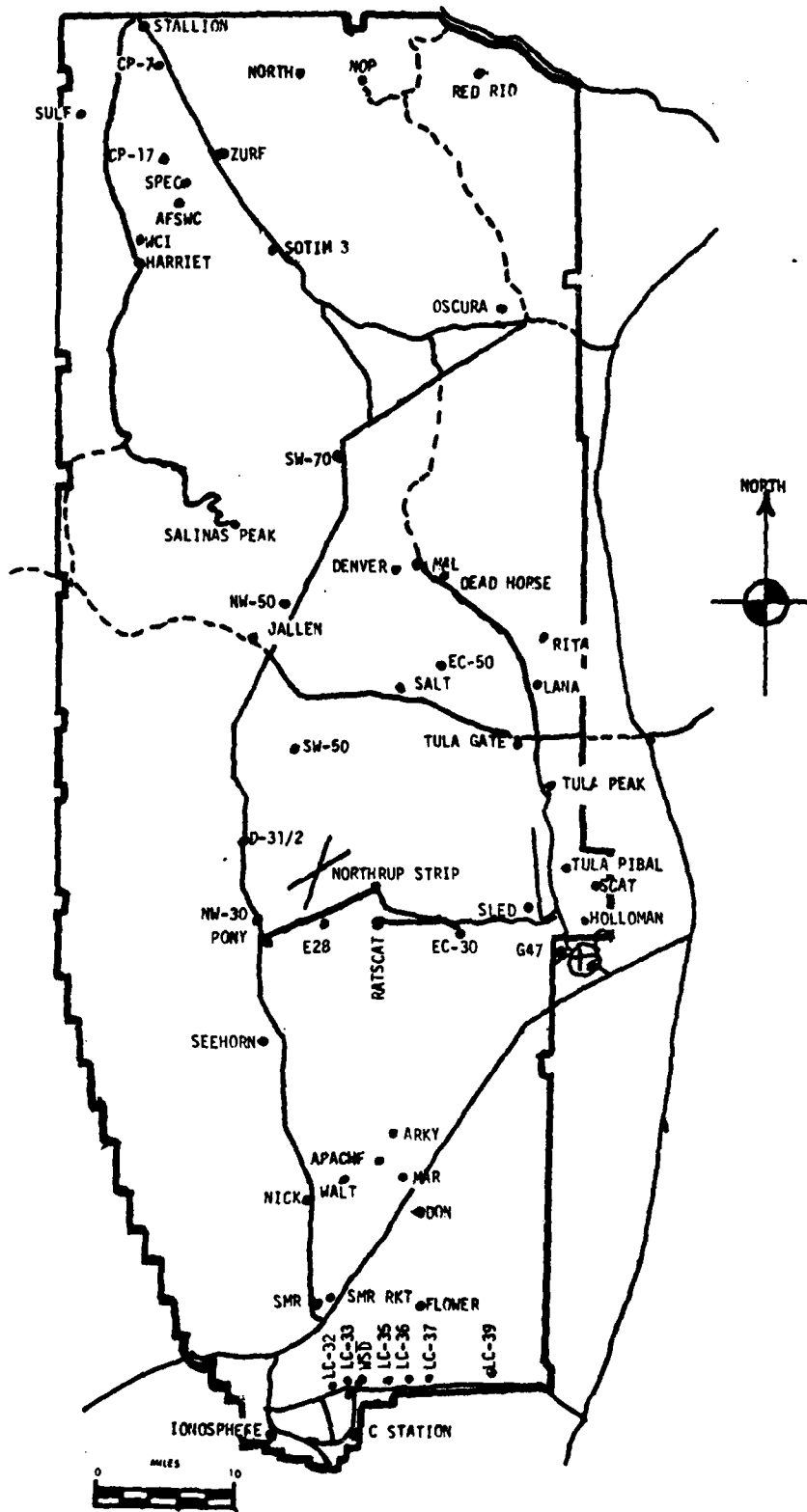
LC-33	2 KM
NICK	2 KM

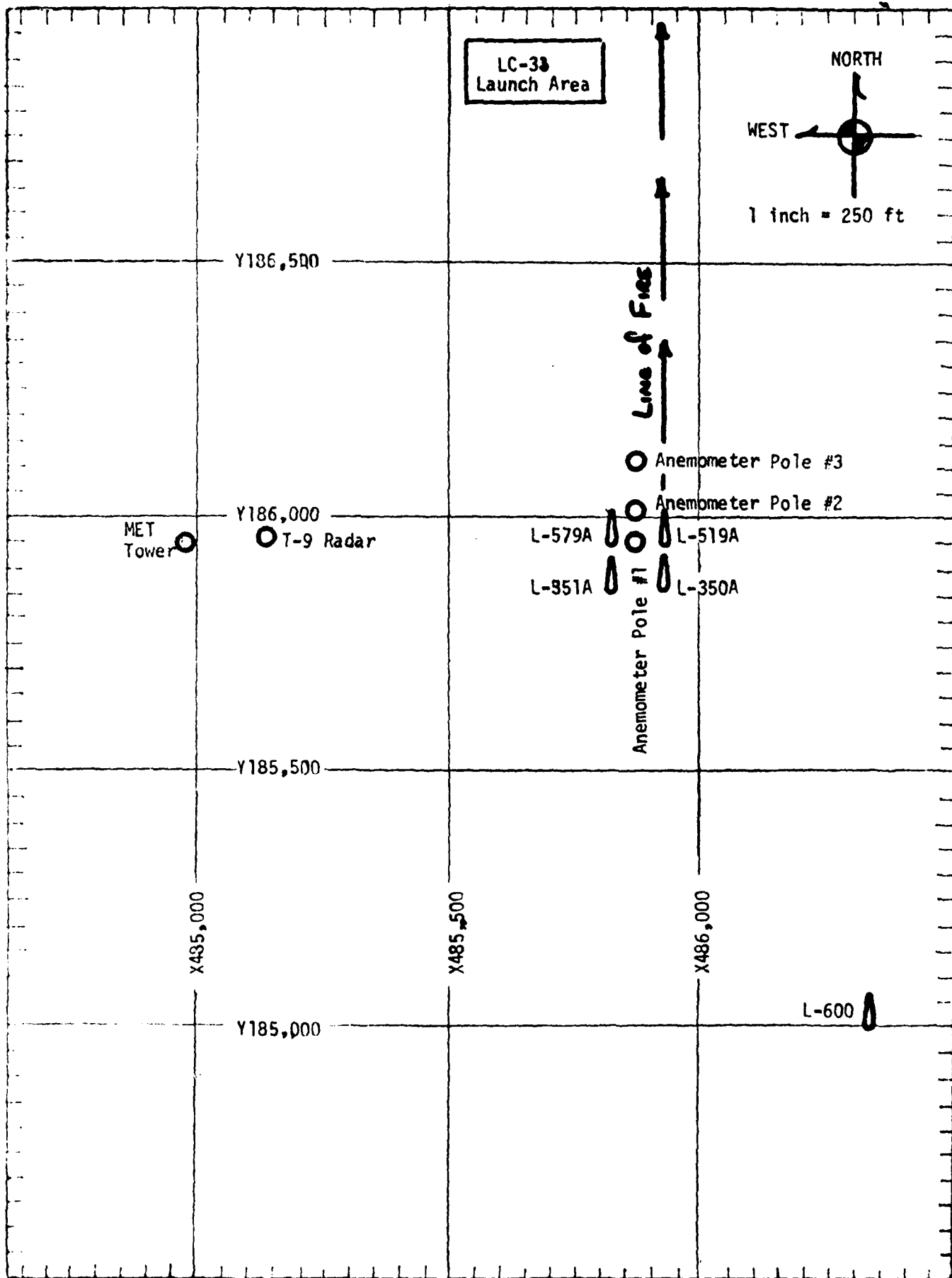
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME

LC-37	1200 MDT
WSD	1300 MDT
LC-37	1430 MDT
WSD	1515 MDT

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

STATION LC-33									
X= 485.135.76 Y= 185.919.24 H= 3,988.57									
TABLE 1 DATE 10 DAY 1981 YEAR MONTH									
TIME M D J	PRESSURE mbs	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND		VISIBILITY	
						DIRECTION degs In	SPEED kts		
1509	882.1	31.5	14.4	36	1007	160	04	40	

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
	5	CU	6,000	5	CI	25,000	

PSYCHROMETRIC COMPUTATION

TIME: MDT	1509
DRY BULB TEMP.	31.5
WET BULB TEMP.	19.8
WET BULB DEPR.	11.7
DEW POINT	14.4
RELATIVE HUMID.	36

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	134	06	T-30	141	05	T-30	163	07
T-20	121	08	T-20	146	08	T-20	168	08
T-10	131	10	T-10	152	09	T-10	146	10
T0.0	142	10	T0.0	150	10	T0.0	156	11
T+10	119	07	T+10	132	07	T+10	150	11

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	118	10	T-30	157	11
T-20	099	13	T-20	180	16
T-10	108	13	T-10	169	15
T0.0	114	14	T0.0	171	16
T+10	115	13	T+10	176	16

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	148	10	T-30	157	15
T-20	167	16	T-20	158	15
T-10	164	15	T-10	157	14
T0.0	169	16	T0.0	154	15
T+10	172	15	T+10	168	15

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 10 Aug 81

SITE: LC-33
TIME: 1509 MDT
WSTM COORDINATES:
X= 484,837.34
Y= 184,124.44
H= 3,975.57

SITE: NICK
TIME: 1509 MDT
WSTM COORDINATES:
X= 470,734.56
Y= 255,775.64
H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	145	07
150	161	11
210	160	11
270	156	11
330	153	12
390	152	12
500	148	13
650	146	13
800	150	12
950	153	09
1150	146	08
1350	151	10
1550	147	15
1750	145	16
2000	142	13

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	145	04
150	152	09
210	154	10
270	156	10
330	159	10
390	158	10
500	152	09
650	138	08
800	134	12
950	138	15
1150	142	15
1350	140	16
1550	141	15
1750	136	12
2000	141	11

TABLE 5AIMING AND T-TIME COMPUTER MET MESSAGES
10 Aug 1981

LC-37 1200 MDT	WSD 1300 MDT	LC-37 1430 MDT	WSD 1514 MDT
METCM1324063	METCM1324064	METCM1324063	METCM1324064
101800122882	101900124884	102050122880	102120124882
00178002 30510882	00204004 30530884	00231004 30670880	00240010 30670882
01167005 30320873	01249008 30400874	01257005 30490871	01259015 30520872
02317003 29910848	02265010 30100850	02233009 30090846	02266011 30170848
03241007 29500810	03258009 29710812	03263012 29680809	03272012 29790810
04244005 29020764	04255009 29240766	04279011 29180763	04278012 29310765
05243007 28630720	05172008 28830722	05236009 28730719	05286009 28810721
06201007 28300678	06120005 28440681	06227006 28330678	06211005 28420679
07243002 27950639	07223002 28090641	07037003 27950638	07154005 28040640
08199004 27600601	08243003 27720603	08035003 27610600	08116004 27680602
09149004 27200564	09173004 27330567	09085007 27310564	09195008 27280566
10098006 26900530	10213007 27030532	10194008 27020530	10247008 27000531
11065005 26760497	11297005 26730500	11320005 26760497	11423005 26740499
12461005 26260452	12443007 26290454	12433009 26290451	12436011 26280453

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

SIGNIFICANT LEVEL DATA
2220180181
LC-37

STATION ALTITUDE 4051.37 FEET MSL
10 AUG. 81 1200 HRS MDT
ASCENSION NO. 181

TABLE 6

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
882.4	4051.4	29.8	14.7	40.0
850.0	5138.4	24.0	12.0	47.0
773.0	7834.2	16.3	9.7	65.0
746.2	8817.8	13.3	10.1	81.0
700.0	10580.7	10.4	5.6	72.0
666.4	11922.8	7.6	3.3	74.0
657.6	12283.1	7.1	.5	63.0
632.4	13336.6	4.8	-1.8	62.0
615.6	14057.5	3.6	-6.1	49.0
582.8	15511.3	.4	-8.5	51.0
550.6	17000.2	-3.7	-10.3	60.0
519.0	18532.9	-4.8	-22.7	23.0
500.0	19494.7	-6.4	-25.6	20.0
480.4	20519.6	-8.1	-24.6	25.0
435.6	23000.1	-12.5	-29.3	23.0
400.0	25123.2	-17.2	-34.2	21.0
371.4	26941.6	-20.7	-30.7	40.0
337.8	29229.6	-25.2	-42.0	19.0
300.0	32030.7	-31.6	-47.0	20.0

STATION ALTITUDE 4051.37 FEET MSL
10 AUG. 81
ASCENSION NO. 181

UPPER AIR DATA
2220100181
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.4	882.4	29.8	14.7	40.0	1007.4	680.5	100.0	1.9	1.000294
4500.0	868.9	27.4	13.7	42.9	1000.2	677.7	112.1	2.5	1.000289
5000.0	854.1	24.7	12.4	46.1	992.4	674.5	120.1	3.3	1.000283
5500.0	839.2	23.0	11.6	49.4	981.1	672.5	125.1	4.0	1.000279
6000.0	824.6	21.5	11.5	52.8	968.7	670.9	128.5	4.8	1.000275
6500.0	810.2	20.1	11.1	56.1	955.5	669.2	130.9	5.6	1.000271
7000.0	796.0	18.7	10.6	59.4	944.5	667.6	133.1	6.1	1.000268
7500.0	782.2	17.3	10.1	62.8	932.6	665.9	136.2	5.7	1.000263
8000.0	768.4	15.8	9.8	67.7	920.9	664.2	139.9	5.3	1.000260
8500.0	754.8	14.3	10.1	75.8	909.1	662.5	144.9	6.1	1.000259
9000.0	741.3	13.0	9.6	80.1	896.9	661.0	148.7	7.2	1.000255
9500.0	728.0	12.2	8.4	77.5	883.7	660.0	153.3	7.4	1.000248
10000.0	714.9	11.4	7.1	75.0	870.7	658.9	159.5	7.4	1.000241
10500.0	702.1	10.5	5.8	72.4	857.0	657.8	160.1	6.4	1.000235
11000.0	689.3	9.5	4.9	72.6	845.5	656.6	162.6	5.9	1.000229
11500.0	676.8	8.5	4.0	73.4	833.4	655.3	167.7	5.5	1.000225
12000.0	664.5	7.5	2.7	71.6	821.4	654.0	171.2	4.3	1.000219
12500.0	652.3	6.6	.1	62.8	809.4	652.8	171.0	3.0	1.000210
13000.0	640.3	5.5	-1.1	62.3	797.8	651.4	176.5	2.4	1.000205
13500.0	628.6	4.5	-2.8	59.1	786.2	650.2	182.3	2.1	1.000200
14000.0	616.9	3.7	-5.7	50.0	774.4	649.0	186.1	1.9	1.000192
14500.0	605.4	2.6	-6.8	49.6	763.0	647.7	196.1	2.5	1.000188
15000.0	594.1	1.5	-7.7	50.3	751.9	646.4	194.3	3.3	1.000185
15500.0	583.0	.4	-8.5	51.0	740.9	645.0	195.6	4.3	1.000181
16000.0	572.0	-.9	-9.1	54.0	730.6	643.4	195.2	5.0	1.000179
16500.0	561.2	-2.3	-9.7	57.0	720.5	641.8	197.7	5.1	1.000176
17000.0	550.6	-3.7	-10.3	60.0	710.5	640.1	201.2	5.2	1.000173
17500.0	540.1	-4.1	-13.4	47.9	698.1	639.5	203.5	5.4	1.000167
18000.0	529.8	-4.4	-17.2	35.9	686.0	639.0	207.2	5.4	1.000161
18500.0	519.7	-4.8	-22.3	23.8	674.1	638.4	209.9	5.2	1.000156
19000.0	509.7	-5.6	-24.1	21.5	663.2	637.5	214.3	4.9	1.000152
19500.0	499.9	-6.4	-25.6	20.0	652.5	636.4	216.2	4.5	1.000149
20000.0	490.2	-7.2	-25.0	22.5	641.4	635.5	220.1	3.4	1.000147
20500.0	480.8	-8.1	-24.6	24.9	631.4	634.5	223.0	2.2	1.000145
21000.0	471.4	-9.0	-25.5	24.6	621.2	633.4	227.1	3.0	1.000143
21500.0	462.2	-9.8	-26.4	24.2	611.1	632.3	232.0	5.3	1.000140
22000.0	453.1	-10.7	-27.4	23.8	601.2	631.3	235.6	7.6	1.000137
22500.0	444.5	-11.6	-28.3	23.0	591.5	630.2	241.5	7.6	1.000135
23000.0	435.6	-12.5	-29.3	23.0	581.9	629.1	248.1	7.3	1.000133
23500.0	426.9	-13.6	-30.4	22.5	572.8	627.8	250.5	6.3	1.000130

STATION ALTITUDE 4051.37 FEET NSL
10 AUG. 81 12 00 HRS MDT
ASCENSION NO. 181

UPPER AIR DATA
2220100181
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 7 CONT

GEOMETRIC ALTITUDE NSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE				DIRECTION DEGREES (IN)	SPEED KNOTS	
24000.0	410.5	-14.7	-31.6	22.1	563.2	620.4	203.1	6.6	1.000128
24500.0	410.1	-15.0	-32.8	21.6	555.0	625.1	199.4	8.1	1.000126
25000.0	402.0	-16.9	-33.9	21.1	546.4	623.7	201.6	9.9	1.000124
25500.0	393.9	-17.9	-33.1	24.9	537.5	622.5	207.3	12.0	1.000122
26000.0	385.9	-18.9	-32.0	30.2	528.6	621.3	209.5	13.3	1.000120
26500.0	370.2	-19.9	-31.2	35.4	519.8	620.2	209.6	13.8	1.000118
27000.0	370.5	-20.8	-31.0	39.5	511.3	619.0	211.5	14.4	1.000117
27500.0	362.9	-21.8	-33.1	34.9	502.8	617.8	215.1	15.3	1.000114
28000.0	355.5	-22.8	-35.4	30.3	494.4	616.5	220.1	16.1	1.000112
28500.0	346.2	-23.8	-37.9	25.7	486.2	615.3	227.9	16.8	1.000110
29000.0	341.0	-24.7	-40.6	21.1	478.2	614.1	232.6	18.0	1.000108
29500.0	334.0	-25.8	-42.5	19.1	470.3	612.7	231.0	20.2	1.000106
30000.0	327.0	-27.0	-43.3	19.3	462.6	611.3	231.0	21.5	1.000104
30500.0	320.1	-28.1	-44.2	19.5	455.0	609.9	233.5	21.4	1.000102
31000.0	313.4	-29.2	-45.1	19.6	447.6	608.5			1.000100
31500.0	306.8	-30.4	-46.0	19.8	440.2	607.0			1.000099
32000.0	300.4	-31.5	-46.9	20.0	433.1	605.6			1.000097

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

MANDATORY LEVELS
2220130181
LC-37
TABLE 8

STATION ALTITUDE 4051.37 FEET MSL
10 AUG. 81
ASCENSION NO. 181

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5135.	24.0	12.0	47.	121.7	3.5
800.0	6862.	19.1	10.8	58.	132.3	6.2
750.0	8669.	13.7	10.1	79.	146.4	6.5
700.0	10570.	10.4	5.6	72.	118.5	6.3
650.0	12584.	6.4	-2	63.	123.4	2.9
600.0	14723.	2.1	-7.2	50.	99.5	2.8
550.0	17006.	-3.7	-10.5	59.	70.9	5.2
500.0	19467.	-6.4	-25.6	20.	36.6	4.5
450.0	22146.	-11.0	-27.7	24.	244.2	7.8
400.0	25081.	-17.2	-34.2	21.	203.0	10.3
350.0	28326.	-23.5	-37.2	27.	225.9	16.5
300.0	31966.	-31.6	-47.0	20.		

STATION ALTITUDE 3339.00 FEET MSL
 10 AUG 61 1300 HRS WDT
 ASSUMPTION 10. 343

SIGNIFICANT LEVEL DATA
 2220029543
 WHITE 360.25

REFLECT COORDINATES
 32.40043 LAT DEG
 106.57053 LONG DEG

TABLE 9

PRESSURE ALTITUDE MILLIBARS AND FEET	TEMPERATURE AIR TEMPORAL DEGREES CELSIUS	RELATIVE PERCENT
930.0 3339.0	30.2 13.5	30.0
967.0 4537.1	28.2 12.5	38.0
990.0 5132.0	26.0 11.7	41.0
750.0 3513.8	15.8 5.7	67.0
700.0 10604.5	11.3 4.7	64.0
605.0 12607.1	8.0 3.5	73.0
650.2 12351.3	7.6 .3	60.6
650.2 13051.2	5.5 -0.1	42.0
502.0 16470.2	-7 -10.1	49.0
505.0 17235.3	-2.4 -15.4	30.0
530.4 17629.5	-3.1 -15.3	43.0
525.9 16191.6	-3.0 -25.2	16.0
530.3 19307.9	-6.2 -28.5	15.0
475.0 20622.4	-8.5 -29.0	10.0
470.4 21119.8	-8.2 -30.9	14.0
407.6 24700.0	-16.0 -30.4	16.0
400.6 25177.3	-16.9 -30.7	29.0

STATION ALTITUDE 3,000.00 FEET
 10 AUG. 41 1305 HRS EDT
 ASCENSION, NO. 345

UPPER AIR DATA
 2200Z000000
 WILF 30000

STATION COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 10

GEOMETRIC ALTITUDE 150 FT	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. OF PRESURE PERCENT	GEOMETRIC HEIGHT FEET	GEOMETRIC ALTITUDE METERS	WIND DIRECTION DEGREES (TD)	WIND SPEED KNOTS	TYPE OF REFRACTION
3000.0	839.9	30.2	13.5	100.0	100.0	115.0	4.1	1.000269
4000.0	833.7	30.2	13.5	100.0	100.0	115.4	4.1	1.000268
4500.0	830.7	29.3	12.6	99.7	97.3	130.0	5.5	1.000263
5000.0	825.9	28.5	11.3	98.6	97.0	139.0	7.1	1.000279
5500.0	824.1	24.9	11.7	97.4	97.0	143.0	8.8	1.000270
6000.0	824.5	23.4	11.7	96.5	97.0	143.1	10.3	1.000274
6500.0	811.1	21.9	11.0	95.0	97.1	143.9	9.0	1.000271
7000.0	795.0	20.4	11.1	93.3	96.9	144.4	6.2	1.000268
7500.0	782.2	18.4	10.7	92.7	97.3	144.0	8.0	1.000264
8000.0	760.5	17.3	10.3	91.0	96.1	140.4	8.0	1.000260
8500.0	752.2	15.8	9.7	89.0	96.0	134.0	8.3	1.000256
9000.0	741.7	14.8	9.5	89.2	96.2	110.0	7.7	1.000250
9500.0	726.4	13.7	7.4	83.0	91.0	103.1	7.6	1.000243
10000.0	715.4	12.6	6.2	86.7	96.2	91.4	7.1	1.000237
10500.0	702.6	11.5	6.0	85.0	95.9	80.7	6.7	1.000232
11000.0	693.9	10.4	4.4	84.3	97.5	75.0	5.8	1.000228
11500.0	677.4	9.2	3.0	83.2	95.1	70.4	5.0	1.000224
12000.0	665.2	8.0	3.5	82.0	94.7	77.2	3.8	1.000220
12500.0	655.0	7.4	-0.4	80.0	95.0	89.9	2.7	1.000209
13000.0	641.0	6.6	-3.2	79.0	95.2	105.7	2.1	1.000201
13500.0	629.3	5.7	-6.1	78.0	94.3	131.0	2.2	1.000194
14000.0	617.6	4.6	-6.8	77.2	93.0	143.0	2.6	1.000190
14500.0	603.1	3.6	-7.4	761.4	94.0	144.2	2.9	1.000187
15000.0	594.8	2.5	-8.1	753.2	94.5	117.9	3.5	1.000184
15500.0	583.7	1.4	-5.7	733.1	90.2	109.0	3.9	1.000181
16000.0	572.8	.3	-7.4	720.3	94.9	103.2	3.8	1.000177
16500.0	562.2	-0.8	-11.3	717.0	94.0	107.5	4.1	1.000174
17000.0	551.5	-1.9	-13.7	707.2	94.1	113.2	5.0	1.000169
17500.0	541.1	-2.9	-13.9	696.4	94.0	113.5	5.8	1.000166
18000.0	533.8	-3.0	-16.8	685.9	94.0	120.0	6.6	1.000159
18500.0	525.7	-3.7	-20.0	672.9	93.0	131.4	6.2	1.000154
19000.0	511.7	-4.9	-27.2	662.9	93.2	143.9	5.7	1.000151
19500.0	500.9	-6.1	-23.4	653.1	93.0	143.0	4.0	1.000149
20000.0	491.3	-7.7	-20.3	642.0	93.0	139.2	3.9	1.000146
20500.0	481.8	-7.7	-29.3	632.0	93.0	217.0	3.0	1.000144
21000.0	472.4	-9.2	-30.3	621.1	92.2	247.0	3.9	1.000141
21500.0	462.2	-9.1	-31.5	610.0	93.0	253.5	5.4	1.000138
22000.0	451.0	-10.3	-35.2	601.0	91.7	251.7	7.1	1.000136
22500.0	443.1	-11.5	-35.6	592.0	90.3	240.0	9.0	1.000134
23000.0	435.3	-12.6	-35.9	583.3	93.9	230.0	9.8	1.000132

STATION ALTITUDE 3989.0 Feet ASL
 10 AUG. 51 1300 HRS MDT
 ASCENSION 10. 543

OPDR R ACQ DATA
 22206, 0.543
 001TF 000005

GEODETIC COORDINATES
 32.40043 LAT DEG
 100.57033 LONG DEG

TABLE 10 CONT

GEODETIC ALTITUDE ASL FEET	PRESSURE	TEMPERATURE AIR DEW POINT WINDS CELSIUS	REL. HUM. PERCENT	DENSITY OF CORRECT SECONDS PER METER	WIND DATA		INDEX OF REFRACTION
					DIRECTION DEGREES (TH)	SPEED KNOTS	
23500.0	427.7	-13.3	15.3	574.4	231.9	10.6	1.000130
24000.0	417.3	-15.0	15.0	563.6			1.000128
24500.0	411.1	-16.1	15.9	557.0			1.000126
25000.0	402.9	-16.3	24.2	547.3			1.000124

STATION ALTITUDE 5000.00 FEET MSL
10 AUG. 61
ASCENSION 10. 543

RAINFALL LEVEL
22200.0543
WHITE SANDS

GEOL. COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 11

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
409.0	5129.	26.0	11.7	41.	141.2	7.6
409.0	6367.	20.8	11.2	54.	144.5	8.2
750.0	8694.	15.4	9.3	67.	129.0	0.0
703.0	10594.	11.3	4.7	64.	79.7	0.5
650.0	12112.	7.2	-1.1	50.	95.4	2.5
606.0	14759.	3.0	-7.8	43.	124.7	3.2
550.0	17951.	-2.1	-14.2	39.	110.0	5.1
509.0	19520.	-6.2	-20.5	15.	100.7	4.8
450.0	22243.	-10.6	-32.0	15.	240.8	8.0
409.0	25135.	-16.9	-30.7	29.		

ALGOLITHIC COORDINATES
32.40175 LAT DEC
106.31232 LONG ETC

SIGNIFICANT LEVEL DATA
2201.00100
LC-37

STATION ALTITUDE 4051.7 FEET MSL
10 00.00 145-00.00 MDT
ASCT 0510 00. 002

TABLE 12

WINDSPEED MILES PER HOUR	WIND DIRECTION DEGREES	TEMPERATURE DEGREES CELSIUS	REL. HUMID. PERCENT
050.4	4051.4	31.6	13.5
050.9	4051.2	26.5	13.9
794.4	0.01.9	21.2	11.6
761.8	0.01.1	17.1	10.2
700.0	10562.8	11.1	7.0
055.4	12360.1	7.1	2.2
012.0	14963.2	3.7	-0.0
507.8	15276.8	1.5	-0.3
571.0	16015.7	.2	-10.6
555.0	16791.5	-1.0	-0.3
533.8	17567.5	-2.7	-0.9
515.0	1743.7	-3.8	-24.6
506.0	16503.9	-5.3	-23.0
484.2	20336.5	-6.2	-20.0
439.2	22619.3	-12.0	-20.0
400.0	23154.2	-16.2	-33.9
303.4	2517.5	-17.8	-35.2
302.4	26204.4	-17.4	-35.9
300.0	32590.6	-31.0	-40.5

STATION ALTITUDE 4051.47 FEET
 10 AUG. 51
 ASCENDING NO. 112

UPPER AIR DATA
 232015Z
 LC-37

GEODETIC COORDINATES
 32.40175 LAT 116
 106.31232 LONG DEG

TABLE 13

GEODETIC ALTITUDE FSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GRAMS PER CUBIC CM	SOUND SPEED METERS PER SEC	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	330.4	71.4	33.7	999.0	102.0	109.0	4.1	1.000200
4050.0	327.0	29.5	39.7	991.1	100.1	105.9	5.4	1.000207
3060.0	322.3	25.9	45.0	982.5	97.2	109.0	6.9	1.000200
5000.0	837.7	25.3	43.1	971.1	97.5	142.2	8.5	1.000202
5060.0	822.3	23.8	50.0	959.2	97.5	143.9	10.1	1.000218
5060.0	800.1	22.3	57.1	947.0	97.1	147.0	11.2	1.000273
7000.0	792.1	20.4	55.8	930.9	97.0	153.9	12.0	1.000269
7500.0	781.2	19.3	50.2	924.0	103.4	159.1	12.2	1.000205
8000.0	767.5	17.7	62.0	913.3	100.5	150.4	12.1	1.000201
9000.0	753.9	10.4	65.0	901.0	104.9	156.2	11.1	1.000256
9000.0	743.5	10.1	69.0	893.0	103.4	150.0	9.9	1.000252
9000.0	727.3	13.3	72.2	877.7	101.9	153.7	6.7	1.000248
10000.0	714.3	12.5	75.4	860.0	100.4	162.9	7.5	1.000244
10500.0	701.6	11.3	73.6	854.5	98.9	141.1	6.1	1.000240
11000.0	685.9	10.1	77.1	842.7	97.4	143.9	5.9	1.000233
11500.0	670.4	9.0	74.6	831.0	96.0	99.5	6.6	1.000220
12000.0	654.1	7.9	72.0	819.3	94.0	83.0	7.2	1.000220
12500.0	652.0	6.0	69.3	801.0	93.2	81.3	5.0	1.000213
13000.0	640.2	5.9	63.2	790.2	91.9	63.3	3.2	1.000206
13500.0	620.2	5.0	57.1	784.0	90.7	55.0	2.9	1.000199
14000.0	610.6	4.0	51.0	773.1	89.4	44.6	3.4	1.000193
14500.0	605.2	3.0	51.1	761.3	88.2	44.2	3.8	1.000169
15000.0	593.0	2.0	54.3	750.0	87.1	40.9	4.3	1.000180
15500.0	582.9	1.1	52.4	733.7	85.9	32.0	5.3	1.000182
16000.0	571.9	.2	44.3	727.3	84.7	43.1	6.6	1.000176
16500.0	561.2	-5	59.4	713.3	84.0	50.9	7.2	1.000177
17000.0	553.6	-1.5	68.0	704.2	83.0	63.3	8.1	1.000176
17500.0	546.2	-2.6	72.5	693.6	81.7	91.0	7.5	1.000174
18000.0	529.9	-3.1	52.7	682.4	80.0	111.0	7.4	1.000165
18500.0	519.8	-3.6	29.4	671.1	80.0	123.4	6.4	1.000157
19000.0	509.9	-4.3	18.9	663.4	79.0	143.2	6.0	1.000151
19500.0	503.2	-5.3	18.0	650.1	77.6	173.2	4.8	1.000149
20000.0	493.6	-5.8	18.0	639.0	77.1	202.0	4.6	1.000146
20500.0	482.1	-6.6	13.5	627.4	76.2	200.0	5.4	1.000144
21000.0	471.7	-7.7	19.0	613.9	75.4	242.3	6.7	1.000142
21500.0	462.6	-8.4	21.3	603.4	75.4	240.0	7.7	1.000139
22000.0	453.6	-10.1	22.7	603.3	75.0	247.0	6.7	1.000137
22500.0	444.7	-11.3	24.1	591.0	75.0	244.4	9.9	1.000135
23000.0	430.0	-12.3	24.0	582.1	74.3	241.3	11.1	1.000133
23500.0	421.8	-13.0	23.5	572.9	73.9	257.0	17.0	1.000130

STATION ALTITUDE 9,512.7 FEET (2,900 METERS)
 TO 600.01 1450 METERS (4,760 FEET)
 ASCENSION 10. 100

WIND TORY CALLS
 2 201010
 10-27

GEODETIC COORDINATES
 32.40175 LAT DEG
 100.31232 LONG DEG

TABLE 14

PRESSURE GEOPHYSICAL		TEMPERATURE		WIND DATA		
MILLIBARS	FEET	AIR DEG. C	DEPT. IN CENTIGRADE	REL. HUMID. PERCENT	DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5070.	20.5	13.9	45.	140-2	7.2
800.0	6039.	21.4	11.9	55.	151.0	11.7
750.0	6500.	16.0	9.0	67.	150.1	10.7
700.0	7052.	11.1	7.0	79.	130.0	6.0
650.0	7670.	6.7	1.5	60.	79.5	4.7
600.0	8273.	2.6	-6.1	53.	15.0	4.0
550.0	8907.	-1.5	-6.5	49.	75.0	8.1
500.0	9521.	-5.3	-25.6	18.	175.1	4.8
450.0	10171.	-10.0	-27.5	25.	240.5	9.2
400.0	10811.	-16.2	-33.0	20.	234.0	15.7
350.0	11574.	-22.4	-39.7	19.	200.5	16.0
300.0	12325.	-31.0	-46.5	20.		

STATION ALTITUDE 3989.00 FEET MSL
10 AUG. 61 1514 HRS MDT
ASCENSION NO. 544

SIGNIFICANT LEVEL DATA
2220020544
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
882.6	3989.0	31.6	12.9	32.0
850.0	5090.2	26.6	12.3	41.0
830.8	5751.3	24.9	11.8	44.0
793.2	7078.7	20.9	10.7	52.0
737.4	9132.5	14.6	8.3	66.0
700.0	10570.8	10.0	8.6	91.0
683.6	11220.0	9.8	3.8	66.0
657.2	12292.0	7.2	-0	60.0
631.0	13389.1	4.8	-4	69.0
613.8	14129.5	3.7	-5.0	53.0
588.6	15244.6	1.1	-5.8	60.0
572.0	15999.8	-0.3	-9.4	50.0
563.8	16379.5	-1.1	-6.2	68.0
547.2	17161.5	-2.8	-14.8	39.0
539.2	17545.4	-2.8	-20.0	25.0
500.0	19501.0	-5.9	-24.6	21.0
415.6	24182.0	-15.1	-32.0	22.0
400.0	25132.3	-15.9	-34.7	18.0

STATION ALTITUDE 3989.00 FEET MSL
10 AUG. 61
ASCENSION NO. 544

UPPER AIR DATA
2220020544
WHITE SAUND

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	#INDU DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	882.6	31.6	32.0	1002.5	682.3	135.0	9.9	1.000284
4000.0	882.3	31.6	32.1	1002.3	682.2	135.1	9.9	1.000284
4500.0	867.3	29.3	36.2	992.6	679.7	140.4	10.7	1.000282
5000.0	852.6	27.0	40.3	983.2	677.1	145.0	11.6	1.000280
5500.0	836.0	25.5	42.9	971.2	675.4	148.8	12.6	1.000276
6000.0	823.6	24.2	45.5	959.0	673.9	151.6	13.3	1.000273
6500.0	809.4	22.6	48.5	947.3	672.1	153.2	13.7	1.000269
7000.0	795.4	21.1	51.5	935.7	670.4	154.1	12.9	1.000265
7500.0	781.4	19.6	54.9	924.2	668.6	154.8	11.8	1.000261
8000.0	767.7	18.1	58.3	912.8	666.8	155.7	11.7	1.000258
8500.0	754.2	16.5	61.7	901.6	665.0	157.2	11.8	1.000253
9000.0	740.9	15.0	65.1	890.6	663.2	159.3	12.0	1.000249
9500.0	727.7	13.4	68.6	879.4	661.4	159.1	10.7	1.000247
10000.0	714.6	11.8	72.1	868.4	659.6	156.6	8.2	1.000246
10500.0	701.8	10.2	89.8	857.5	657.8	145.1	5.7	1.000244
11000.0	689.1	9.9	74.5	844.0	657.0	118.9	3.7	1.000231
11500.0	676.6	9.1	64.4	831.5	655.9	105.0	3.2	1.000221
12000.0	664.3	7.9	61.6	820.3	654.3	90.1	3.0	1.000214
12500.0	652.2	6.7	61.7	808.8	652.9	90.3	3.6	1.000210
13000.0	640.2	5.7	65.8	797.1	651.7	88.9	4.2	1.000207
13500.0	628.4	4.6	66.6	785.4	650.4	80.2	4.6	1.000203
14000.0	616.8	3.9	55.8	773.4	649.3	74.8	4.9	1.000195
14500.0	605.3	2.8	55.3	762.1	648.0	73.7	4.5	1.000190
15000.0	594.0	1.7	58.5	751.1	646.7	61.5	4.7	1.000188
15500.0	582.9	.6	56.6	740.0	645.4	95.7	5.7	1.000183
16000.0	572.0	-.3	50.0	728.9	644.1	107.2	6.8	1.000178
16500.0	561.2	-1.4	63.5	717.0	643.0	116.5	8.0	1.000178
17000.0	550.6	-2.4	45.0	707.4	641.5	126.1	8.4	1.000169
17500.0	540.1	-2.8	26.7	695.4	640.9	135.3	8.9	1.000162
18000.0	529.8	-3.5	24.1	684.0	640.0	147.6	7.2	1.000158
18500.0	519.7	-4.3	23.0	672.9	639.0	167.1	5.8	1.000155
19000.0	509.8	-5.1	22.0	662.1	638.0	200.1	4.5	1.000152
19500.0	500.0	-5.9	21.0	651.4	637.1	236.5	5.1	1.000149
20000.0	490.2	-6.9	21.1	641.0	635.9	249.9	5.9	1.000147
20500.0	480.7	-7.9	21.2	630.8	634.7	257.1	7.0	1.000144
21000.0	471.3	-8.8	21.3	620.8	633.5	253.3	8.6	1.000142
21500.0	462.0	-9.3	21.4	611.0	632.3	249.9	10.1	1.000139
22000.0	453.0	-10.8	21.5	601.3	631.1	246.3	11.5	1.000137
22500.0	444.1	-11.8	21.6	591.7	630.0	241.9	12.7	1.000135
23000.0	435.5	-12.3	21.7	582.4	628.8	236.9	13.8	1.000133

STATION ALTITUDE 3989.00 FEET MSL
 10 AUG. 81
 ASCENSION NO. 544

UPPER AIR DATA
 2220020544
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 16 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
23500.0	426.9	-13.8	-30.9	21.9	573.2	627.8			1.000130
24000.0	416.6	-14.7	-31.7	22.0	564.1	626.4			1.000128
24500.0	410.3	-15.4	-32.8	20.7	554.3	625.6			1.000126
25000.0	402.1	-15.8	-34.3	18.6	544.2	625.1			1.000123

STATION ALTITUDE 3989.00 FEET MSL
10 AUG. 81
ASCENSION NO. 544

MANDATORY LEVELS
2220020544
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 17

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5086.	26.6	12.3	41.	145.7	11.8
800.0	6830.	21.6	10.9	51.	153.9	13.3
750.0	8652.	16.1	9.0	63.	157.9	11.9
700.0	10560.	10.0	8.6	91.	142.7	5.3
650.0	12576.	6.6	-1	62.	90.3	3.7
600.0	14718.	2.3	-5.4	57.	73.2	4.4
550.0	17006.	-2.5	-13.1	44.	126.5	8.4
500.0	19473.	-5.9	-24.6	21.	236.2	5.1
450.0	22154.	-11.1	-28.8	22.	245.2	12.0
400.0	25090.	-15.9	-34.7	18.		